



African savannah elephants, Kenya. © WWF-Canon / Martin Harvey



The Ilmojoli Farmer's Association "watch tower" to see approaching elephants, Kenya. © WWF-Canon / Martin Harvey

Conflicts between humans and animals are a serious problem in many parts of the world. The damage and destruction caused by a variety of animals to human property – and sometimes to human life – is a real and significant danger to many human communities. And with the animals often killed, captured, or otherwise harmed in retaliation, these conflicts are one of the main threats to the continued survival of many species. WWF views human-animal conflict as a priority issue for its work on species protection.

What's the problem?

In many parts of the world, people and animals are increasingly coming into conflict over living space and food. This is mainly due to expanding human populations and the continued loss of natural habitats.

The impacts are often huge. People lose their crops, livestock, property, and sometimes their lives. The animals, many of which are already threatened or endangered, are often killed in retaliation or to 'prevent' future conflicts.

Human-animal conflict is a universal problem. From tigers killing cattle in Malaysia and elephants trampling fields in Kenya to sun bears destroying corn crops in Colombia and wolves attacking sheep in Italy ...it happens around the world, affects rich and poor, and is bad news for all concerned.

There can also be a knock-on effect. If solutions to these conflicts are not adequate, local support for conservation of the species also declines.

So what's the answer?

WWF and its partners have a number of projects around the world to reduce human-animal conflict and improve the livelihoods of the people affected. These projects range from traditional approaches such as compensation schemes to the development of novel strategies which address the root causes of the conflict. The solutions are often specific to the species or area concerned, and are often creative and simple.

An important aspect of the work is that it benefits both the animals and local human communities, and is developed with these communities. The idea is to find solutions that lead to the mutually beneficial co-existence of people with wildlife. In most cases, the work has often led to people being more enthusiastic and supportive of conservation, and has demonstrated that people can live alongside wildlife while developing sustainable livelihoods.

Examples of WWF's work on human-animal conflict

Many different animals come into conflict with humans in different parts of the world. WWF focuses on priority species in priority areas, where conflict with humans poses a serious threat to their continued survival. The majority of WWF's conflict mitigation work is done in collaboration with many different partners, ranging from other conservation organizations to local communities and governments.

1. Elephants

In both Africa and Asia, elephant habitat is being replaced by agriculture — both small-scale subsistence agriculture and international agribusiness such as palm oil. The animals are being squeezed into smaller and smaller areas of remaining natural habitat, which are surrounded by crops that elephants like to eat. As a result, elephants frequently raid and destroy the fields.

Small farmers — often desperately poor and economically vulnerable, and sometimes forced by circumstances to encroach into elephant habitat — can lose their entire livelihood overnight to an elephant raid. Big business suffers too: for example, in Riau, Indonesia, the cost of elephant damage to oil palm plantations and timber estates is estimated at around US\$105 million per year.

There are also deaths and injuries on both sides. In Kenya alone, over 200 people have been killed by elephants in the last seven years, and wildlife authorities shoot between 50 and 120 elephants each year. With elephant populations declining dramatically over the past 100 years, habitat loss, poaching, and conflict with people are now the biggest threats to their continued survival.

Work by WWF and its partners to reduce these conflicts includes:

- chili and tobacco-based deterrents to keep elephants out of fields (*Kenya, Malaysia, Mozambique, Namibia, Tanzania, Zambia*)
- early warning systems, e.g. manned watchtowers and observers with whistles stationed in front of farms (*India, Kenya, Mozambique*)
- making farms easier to defend (*Kenya, Mozambique*)
- growing crops that elephants don't like (*Kenya*)
- encouraging alternative livelihoods that don't lead to conflict (*Kenya, Mozambique*)
- investigating alternative livelihoods based on the maintenance of elephant habitat, such as tourism (*Kenya*)
- improving the management of oil palm plantations and timber estates to keep elephants out (*Indonesia, Malaysia*)
- creating new protected areas and improving the management of existing protected areas (*India, Kenya, Malaysia, Mozambique, Nepal*)
- restoring degraded biological corridors to facilitate seasonal movement of elephants and limit their need to travel through human settlements (*Malaysia, Nepal*).

2. Great apes

Human activity is taking its toll on our closest relatives. Like elephants, great apes in Africa and Asia are losing their forest home due to commercial logging and expanding agriculture. Although the majority of great apes killed by humans are hunted by poachers, they are also killed in retaliation for raiding crops. For example, around Kibale National Park in Uganda, chimpanzees raid crops such as banana, maize, and sugar cane on average 75 times a year. In response, some 15% of affected farmers put out traps, snares, or poison to kill the crop-raiders. Similarly, mountain gorillas that have lost their natural fear of humans due to gorilla-based tourism also raid crops, with some groups foraging principally on cultivated land for weeks or even months. Both chimpanzees and mountain gorillas have also been known to attack people.

The rapid expansion of oil palm plantations in Sabah (Borneo), Malaysia, in the 1980s and 1990s saw many orang-utans being displaced from their natural habitat and killed for raiding plantations and eating young oil palm fronds. Crop raiding is much less frequent these days, but habitat loss due to expanding plantations remains a great threat to the survival of Asia's only great ape.

Work by WWF and its partners to reduce these conflicts includes:

- creating a community-managed buffer zone between Bwindi Impenetrable National Park and agricultural fields, and investigating alternative crops and other forms of income generation to reduce raids by mountain gorillas (*Uganda*)
- establishing monitoring systems to measure the effectiveness of different approaches to reducing human-gorilla conflict (*Uganda*)
- replanting trees to restore degraded forests in wildlife sanctuaries and between oil palm plantations in order to provide more living space and additional food sources for orang-utans (*Malaysia*).



Chimpanzee mother and baby, Africa.
© WWF-Canon / Martin Harvey

3. Big cats

The vast majority of big cat species have lost huge areas of their natural habitat over the last century. Their numbers have correspondingly declined and many remaining populations are now isolated and confined to remote areas. For example, the number of tigers worldwide has declined from 100,000 to no more than 7,000, while the habitat of the Central Asian leopard has declined from several million hectares to less than 800,000 hectares.

While habitat and the availability of natural prey for big cat species continue to decline, the number of domestic livestock raised near their habitat is steadily increasing. An inevitable result is that the cats start preying on the livestock. Many communities are heavily dependent on their livestock for sustenance and income, so when livestock predation occurs, the cats are captured and taken to zoos, killed in retaliation, or actively persecuted to prevent similar events happening in the future.

For example, a survey in one part of northern India indicated that over a 14-month period, the average household lost six animals, valued at almost US\$300, with snow leopards responsible for 55 per cent of these kills. Between 1996 and 2002, eight snow leopards were reported killed in one northern Indian village alone. Although most big cats don't attack people, tigers sometimes do, and it appears that these attacks are becoming more frequent.

Work by WWF and its partners to reduce these conflicts includes:

- providing or helping with financial or animal compensation, and/or livestock insurance schemes for livestock lost to tigers (*Bhutan, India*), snow leopards (*Bhutan, Mongolia*), Central Asian leopards (*Turkmenistan*), and jaguars (*Argentina*)
- improving livestock management and/or husbandry so that predation is less frequent (*India, Malaysia, Mongolia, Pakistan*)
- promoting alternative livelihoods and income generation opportunities that either don't encroach on, or actively rely on, tiger habitat (*India and Nepal*) and snow leopard habitat (*Bhutan, Mongolia, Nepal*)
- creating buffer zones between protected areas and human settlements (*Nepal*)
- forming local snow leopard conservation committees (*Nepal*)
- monitoring Eurasian lynx numbers and translocating animals once they have reached a maximum number in a particular area (*Switzerland, where the species was reintroduced in 1971*).



Snow leopards, Central Asia.
© WWF-Canon / Martin Harvey



Sheep wool and felt products made by local women involved in a WWF-supported alternative income generation project to protect snow leopard, Irbis Enterprises, Mongolia.
© WWF-Canon / Anton Voraer

4. Greater one-horned rhinos

The greater one-horned rhino is a conservation success story in India and Nepal – numbers have increased from 600 in 1975 to about 2,400 today. But with this success has come conflict: the growing rhino population increasingly competes with humans. The animals have destroyed crops, leading to retaliatory actions from affected farmers. Poaching is the main threat to the species, but conflict with humans is also a problem.

Work by WWF and its partners in Nepal to reduce these conflicts includes:

- translocating rhinos from Royal Chitwan National Park to Royal Bardia National Park to reduce pressure caused by large rhino numbers at Royal Chitwan National Park
- creating buffer zones around protected areas and between forests and agricultural fields
- education to promote acceptance of rhinos
- promoting alternative livelihoods that don't encroach into rhino habitat.

5. Bears

Latin America's only bear, the spectacled bear, lives throughout the Andean mountains of Venezuela, Peru, Ecuador, Bolivia, and Colombia. However, its forest habit is shrinking as agriculture encroaches higher and higher up the hillsides. The forest is usually replaced with maize fields – a particularly favoured food of the bears. Spectacled bears will also attack livestock. In retaliation, some 200 bears are killed each year. Conflicts with humans seem to have increased in recent years with the increased deforestation of Andean forests to establish illegal farms.

Brown bears once roamed throughout most of the Northern Hemisphere. In Europe, the only large population remaining today is in the Carpathian Mountains of Central/Eastern Europe. The animals were driven to extinction in Western Europe by the early 1900s, but thanks to reintroduction and conservation programmes, populations have been re-established in some areas and bear numbers are increasing. However, after not seeing them in the wild for up to 100 years, people have lost the knowledge of how to live with these animals and so come into conflict with them. Rapid economic development in Central and Eastern Europe is also putting pressure on brown bears and bringing them into increased conflict with humans. Throughout their range, brown bears attack livestock and raid beehives, orchards, rubbish bins, and occasionally food storehouses. They will also attack people, although in the vast majority of cases this behaviour is defensive rather than predatory; for example bears often attack humans after having been wounded by a hunter.

Work by WWF and its partners to reduce these conflicts includes:

- environmental education on the importance of conserving bears as well as what to do if one is encountered (*Austria, Colombia, Slovakia, Venezuela*)
- research on bear distribution to help, for example, identify the areas most vulnerable to conflict and concentrate conflict mitigation efforts to where they are most needed (*Austria, Colombia, Italy, Slovenia*)
- research on livestock predation and dietary habits of spectacled bears (*Venezuela*)
- research into different solutions for spectacled bear conflict, including growing crops that bears don't like, moving bears to different areas, and establishing new protected areas and corridors to connect fragmented areas of natural habitat (*Colombia, Ecuador, Peru, Venezuela*)
- designing new national and international strategies that respond to the biological and ecological needs of the spectacled bear (*Colombia, Ecuador, Peru, Venezuela*)
- teaching brown bears to stay away from human settlements by using fire crackers and other adverse conditioning techniques (*Austria*)
- providing information on, and distributing, solutions for farmers to reduce conflict, such as electrical fences for beehives (*Austria*)
- working with hunting organizations to set up a compensation scheme for bear damage to livestock and beehives (*Austria*)
- establishing WWF bear advocates who act as the first contact for local people to address any bear concerns and to monitor and identify bear damage (*Austria*)
- developing management plans for brown bears together with all stakeholders, which include guidelines for dealing with bears that cause problems for humans, compensation issues, protected area management, hunting management, and/or data collection (*Austria, Romania*).



Spectacled bear, Colombia. © WWF-Canon / Kevin Schafer

6. Wolves

Like brown bears, wolves were driven to extinction throughout most of Western Europe by the beginning of the last century. Thanks to conservation efforts, the animals have returned to the European Alps from Italy's Apennine Mountains. However, as with bears, wolves come into conflict with people who have lost the knowledge of how to live with these large carnivores. For example, despite the fact that livestock predation by wolves is usually very low in Western Europe — and that many, many more sheep are killed by dogs — farmers remain quick to blame wolves for all losses and shoot them in retaliation. Tourists and hikers are afraid of encountering not only wolves, but also the farmers' dogs that protect the sheep. This has led to conflict between hikers and farmers. In addition, hunters view wolves as unwelcome competition for deer and other prey animals, and fear that their quotas will be reduced if wolf populations grow.

Work by WWF and its partners to reduce these conflicts includes:

- helping with the training and introduction of large dog breeds and donkeys to protect sheep against wolf attacks (*France, Italy, Switzerland*)
- testing of electric fences to keep wolves away from livestock (*Switzerland*)
- promoting educational courses for farmers and shepherds on measures to reduce conflict with wolves (*Switzerland*)
- providing information for hikers and tourists on how to behave if a guard dog is encountered, and gaining public support by explaining the "job" of these dogs. (*Switzerland*)
- initiating discussions on game management (*Austria, Switzerland*)
- promoting public awareness to gain support for the presence of large carnivores (*Italy, France, Austria, Germany, Switzerland*).



Grey wolf, Germany. © WWF-Canon / Chris Martin Bahr

Find out more...

This fact sheet is designed to give a broad overview of the problems that human-animal conflict can cause, and to give examples of WWF's work and solutions on the ground. For more detailed information on species, WWF, and the work we do, please visit www.panda.org/species

Take action...

Visit www.passport.panda.org to find out how you can take action to help protect species and fragile environments.



for a living planet®

www.panda.org/species

WWF International
Avenue du Mont-Blanc
CH-1196 Gland
Switzerland

tel: +41-22 364 9111
fax: +41-22 364 0640